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ABSTRACT

Grove College (Pennsylvania) planned and implemented a mobile computing strategy for freshmen. Each member of the class of 1998 was issued a notebook computer upon arrival for freshman orientation. The help desk was staffed and faculty were ready to integrate meaningful computing activities into the curriculum. Students received 2 hours of preliminary instruction and training during the first couple of days of freshman orientation. The first year of the computer initiative was successful because: (1) many potential problems were eliminated during the initial 72-hour "burn-in" period; (2) the help desk staff met the needs of the users; and (3) information technology was significantly integrated into the business, mathematics, humanities, and computer systems departments. The class of 1999 will be issued upgraded computers. Also, some changes will be made in training, printing, the cost structure, and number of support staff. (AEF)

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Mobile Computing at Grove College

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Introduction

With the implementation of the first year of the Grove City College Computer Initiative, the College had committed to implement a mobile computing strategy. Each member of the Class of 1998 was "issued" a personal notebook computer upon arrival for freshmen orientation. Freshman orientation included introductory training to use the notebook system and software. The Grove City College Computer Help Desk was staffed and ready to meet the needs of this large, anxious group of new computer users. Faculty, given their notebook computers during the spring of 1994, were ready to integrate meaningful computing activities into the curriculum.

Now the College prepares for yet another freshman class to arrive. What has this first year of the Grove City College Computer Initiative taught us? What lessons have we learned? What has been the impact on students, faculty, and administration? This paper provides addresses to these questions.

Review of 1994-1995 Plan

Each member of the Class of 1998 received a Compaq Contura 4/25c with Intel 486SL-25 microprocessor, 4 MB RAM, 120 MB hard drive, 1.44 MB 3.5-inch diskette drive, dual-scan passive matrix color LCD, large Compaq (Logitech) Trackball point device, internal 96/24 FAX modem, MS-DOS 6.2, Windows 3.1, Microsoft Works for Windows 3.0, Wolfram's Mathematica. All software was installed by student workers during the summer after the machines were delivered on campus. The systems were each "burned-in" for a 72-hour time period. Approximately 20 of 550+ systems experienced major component failure (hard drive, motherboard, diskette drive, etc.) and were repaired.

To meet the printing requirements of the students, an HP Deskjet 520 Inkjet was placed in each freshman dorm room. Each student had their own print cable to attach to the printer. Each printer initially had an ink cartridge and paper; additional cartridges and paper were supplied in the bookstore at the student's expense. Printers were also placed in the computer center for commuters.

Students received two hours of preliminary instruction and training during the first couple of days of freshman orientation. This instruction included orientation to the Compaq system, and an introduction to Windows. Subsequent training covered Works for Windows word processing and spreadsheet modules. Additional training was provided during the first week of classes.

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The cost of the system was met by a technology fee of $325 per semester, or $2600 payment in full plus sales tax. The cost of purchasing the Compaq system outright was $2300 plus tax. Approximately 40 freshman purchased the system outright. Twenty-five upperclassmen participated in the program by either purchasing a system outright, or by joining the payment plan option, paying $325 per semester of attendance.

Keeping 575 freshman computer users happy is no small task. The Help Desk staff, managed and trained by a full-time manager, did well in answering the many questions that followed the freshmen class arrival. The Help Desk, located in the Technological Learning Center (TLC) was staffed by three students workers during the TLC's operating hours, 8:00 AM until 2:00 AM. Students were able to carry their notebooks to the Help Desk for assistance; telephone assistance was also available during operating hours (campus number was extension 2255 -- CALL.) Access to the Help Desk was provided 24 hours via the FAX hotline (extension 2329 -- AFAX). Off-campus users used a toll free number (1-800-33GROVE.)

Initially the Academic Computing staff directly responsible for supporting the mobile computing initiative consisted of three full-time people (help desk manager, hardware/software technician, secretary) and one administrator. Other Academic Computing staff and personnel assisted as required, depending upon the magnitude of the task at hand.

1995-1996 Plan

Introduction

Generally, the first year of the Grove City Computer Initiative has been very successful. The fall distribution of the notebook systems during freshmen orientation was accomplished very smoothly; the training sessions were moderately successful in giving the students foundational skills to begin to use the systems for classroom work. The Compaq systems were reliable; system failures were minimal. The Help Desk was very successful in meeting the needs of the large user population for both software and hardware problems.

Keys to Success

Many factors contribute to the success of a project of this magnitude. Many potential problems were eliminated beforehand during the initial 72-hour burn-in period. Approximately 20 systems (3%) had major component failure (hard drive, diskette drive, motherboard, color panel.) The system burn-in is key to assuring the reliability of the distributed systems and will again be conducted during this next go-round. Important also in keeping the hardware up and running was the implementation of a "while you wait" repair response for selected items. A database was created for all equipment serial numbers (computers, trackballs, AC adapters.) The database was used for equipment maintenance, inventory, and accounting purposes, as well as for the return of lost equipment.

Central to the success of the GCC plan thus far has been the design, staffing, and management of the Help Desk. Through the efforts of the Help Desk, a large and diverse user population (students and faculty) has been kept "on-line!" The following statistics compiled during the first semester of this past academic year shed light on the level of service provided by this facility.

Help Desk Statistics

Questions answered:	2,653
Most calls in one day:	104
Average length of call:	5 minutes
Average notebook system repairs:	1.5 days
Printer repair:	7-10 days

Most of the questions directed to the Help Desk have been from students (96% students, 4% faculty.) Access to the Help Desk has been split evenly between walk-in (50%) and phone (50%.) Most of the questions have dealt with software (75%) versus hardware (25%.)

Additionally, procedures were put in place to train and give direction to student workers including the introduction of a three tier help system for question response, training meetings for Mathematica and customer service techniques, and the creation of a "supported software" reference library for student consultants.

Progress of integrating information technology into the curriculum continues. Significant strides have been made in the business, mathematics, humanities, and computer systems departments. Activities involving the notebook systems are limited, however, in any class where the students are a mixture of those who have the systems and those who do not.

The significance of the public access lab in the Technological Learning Center has diminished somewhat. The machines found there (Windows-based 386/20 PCs) are still reserved by faculty for class activities, but those systems have nearly outgrown their usefulness. The Macs found in TLC continue to function as a word processing pool by upperclassmen.

Changes for '95-'96

The System

The most obvious change this next year will be the notebook system itself. The Class of 1999 will be issued the following system:

1995-1996 System
Compaq Contura 410c
50 Mhz 486 SLC cpu
8 MB RAM
350 MB HD
PCMCIA slots
19.2 modem
4 year warranty

The Compaq 425c met the needs of most students, but the 120 MB hard drive filled up quickly on a Windows machine. Additionally, performance is greatly improved in Mathematica with an additional 4 MB of RAM. The 19.2 modem will be a big improvement over the 2400 baud modems that are packaged with the Compaq Contura 425c models. Dialup access is used for libary and Internet access.

Training

Attendance at the introductory student-training sessions was voluntary. The initial sessions (system introduction ,Windows, and word processing) were well attended. Attendance dropped significantly for remaining sessions of spreadsheet and database introduction. Refresher sessions were given later in each semester. Many freshmen students received formal training in courses required of all business and engineering majors. The only change in the initial introductory training will be to postpone the first training session from the first night of freshmen arrival to later during orientation.

Printing

Placing an inkjet printer in each of the freshmen rooms provided quality printing conveniently and inexpensively to the students. It became a logistical nightmare, however, to keep track of those printers when roommates changed, students left school, or when new students transferred in. To avoid this problem further, each student of the class of '99 will have a printer bundled with his/her notebook system. The printer of choice will be the Canon Bubblejet 200EX, a quality printer priced significantly lower that the HP Injet 520 or 540. The existing HP 520 Inkjets were distributed this spring to half of the class of '98, the other half of the class receiving new Canon 200s.

The Cost

The final significant change for the '95-'96 academic year is the fact that the Information Technology fee of $325 per semester has been canceled. The cost of the notebook/printer bundle has been rolled into the GCC tuition. This change requires a sliding scale of charges for the four classes next year, but the annual cost of tuition, room, board, and the notebook/printer bundle is still under $10,000.

Staffing

Staffing will largely remain the same except for the addition of one additional hardware technician. Much of the hardware repair and software support was the responsibility of one person. That responsibility will be divided. Additional support will be necessary as the campus network grows.

Conclusion

This Fall half of the student body will have notebook systems and printers. Faculty will have one more year of experience taking advantage of the available technologies. The GCC Computer Initiative continues to progress and evolve. The Campus will continue to strive to foster an environment that prepares our students for this information age and the turn of the century.